

### Endophytic fungi from *Combretum leprosum* with potential anticancer and antifungal activities

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There is a general call for new antibiotics, chemotherapeutic agents and agrochemicals that are highly effective and possess low toxicity. Large number of microbial sources have been tested for production of bioactive compounds. Among these microorganisms, some endophytic fungi have been studied as rich source of bioactive compounds. The present study deals with the isolation of endophytic fungi from *Combretum leprosum* (Combretaceae family), and the evaluation of the potential anticancer and antifungal activities. This plant is used in folk medicine to treat haemorrhages, and as a sedative. The fungal isolates were identified by sequencing the 18S rDNA region and their dichloromethane extracts were investigated for *in vitro* anticancer activity, determining the growth inhibition and cytotoxic properties against seven cancer cell lines (HeLa, ECV304, B16F10, J744, P388, Jurkat and k562). The antifungal activity were tested against *Candida albicans*, *Candida krusei*, *Candida glabrata*, *Candida guilliermondii*, *Candida tropicalis*, *Cryptococcus neoformans* and *Trichophyton rubrum*. In the *in vitro* antitumor assay, the crude extract of a fungal strain, identified as *Aspergillus* sp. CFE103, showed significant cytotoxicity effects against the cancer lines J744 with IC<sub>50</sub> of 0.80 and leukemia (Jurkat) with IC<sub>50</sub> of 0.89. Among the solid tumors, the highest inhibition occurred against ECV304 with IC<sub>50</sub> of 3.08 and (HeLa) with IC<sub>50</sub> of 2.97. The extract of another endophytic strain, identified as *Fusarium oxysporum*, showed high levels of inhibition against P388 with IC<sub>50</sub> of 2.14 and J744 with IC<sub>50</sub> of 2,98. The minimum inhibitory concentrations were observed between 4-125 µg/ml, being the most active compounds obtained from *F. oxysporum* CFE177 against *C. glabrata*, *C. neoformans* and *T. rubrum*. It is concluded that compounds that showed better antifungal activities were those that showed the most active antitumor activity, and that *Combretum leprosum*, hosts promising source of endophytes with potential anticancer and antifungal activities.



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**Book of Abstracts**

Melo, Itamar Soares	22, 317, 334	
Mendel, Zvi	21, 289	
Meng, Xian-Ying	26, 109	
Menu, Frédéric	24, 82	
Mergaert, Peter	12, 96, 334	
Merlos, Miguel Angel	18, 250	
Merrild, Marie	<b>29,218,334</b>	
Merville, Adrien	24, 82, 334	
Mesjasz- Przybylowicz, Jolanta	29, 34, 222, 262, 334	
Metcalf, Jason A.	13, 122, 335	
Metrak, Monika	24, 84	
Miadlikowska, Jolanta	18, 226, 227, 335	
Miao, Vivian AW	24, 80	
Michalik, Anna	27, 61	
Miché, Lucie	30, 237	
Michelsen, Anders		29, 218
Minaeva, Katherina		26, 59
Mironov, Timofey		26, 114
Mishra, Raj K.		14, 147
Miszalski, Zbigniew		34, 264
Mitchell, B. Greg		17, 205
Mleczko, Piotr		3, 29, 219, 335
Moczek, Armin		18, 232
Mogildea, Daniela	<b>29,220,335</b>	
Molan, Peter		2
Monk, Jana		0
Moor, Mari		,
Morag, Neta		2
Moran, Nancy A.		8
Moreau, Pierre-Arthur		4
Moretti, Beatrice		2
Morin, Emmanuelle		0
Morin-Adeline, Victoria		,
Moriyama, Minoru		2
Mosandl, Reinhard		8
Mosquera, Ana Teresa		7
Mostafavi, Pargol Ghavam		
Moszczyński, Krzysztof		3
Motta, Maria Cristina M.		2
Mouton, Laurence		,
Moya, Andrés		2
Mozes-Daube, Netta		4
		7
		1
358		9
		,
		2
		7
		0
		1
		3
		,
		1
		1
		9
		11,
		70
		14, 151

13,129  
21,314  
19,266  
21,308  
29,174

**29,221,327**

24,125  
26,110,335  
13,131  
13,24,81,87,131  
20,274